DETAILED ACTION

Status of Claims

1. This supplemental, non-final Office action is in reply to the affidavit filed on 13 August 2010 and the telephonic interview with Applicant's representative held on 27 August 2010.
2. Claims 1 – 5, 8, 9, 11 – 17, 19, 21 – 28 and 31 – 34 have been amended.
3. Claims 6, 7, 10 and 20 have been cancelled. Claim 18 has previously been canceled.
4. Claims 1 – 5, 8, 9, 11 – 17, 19 and 21 – 34 are currently pending and have been examined.

Response to Amendments

5. The rejection of claim 14 under 35 USC §112, 2nd paragraph is withdrawn in light of Applicant's amendments.
6. The rejections of claims 1 – 17 and 19 – 33 under 35 USC §103 over Hanagan in view of Pather and claim 34 over Hanagan in view of Pather and further in view of Seshadri are withdrawn and new art addressing these limitations is presented.

Response to Arguments

7. Applicant's affidavit received on 13 August 2010 has been fully considered and provides persuasive evidence that the listed inventors had obligations to assign all rights to their inventions to the assignee prior to the invention of the instant application. Moreover, Examiner believes that the prior art of Pather and Seshadri are therefore not prior art under 35 U.S.C. 102(a), but qualifies as prior art only under 35 U.S.C. 102(e). Owing to the assignee of the prior art, the instant application, and the aforementioned affidavit, Applicant has successfully disqualified the references of Pather and Seshadri as prior art.
8. Referring to the previous Office action, Examiner has cited relevant portions of the references as

a means to illustrate the systems as taught by the prior art. As a means of providing further clarification as to what is taught by the references used in the first Office action, Examiner has expanded the teachings for comprehensibility while maintaining the same grounds of rejection of the claims, except as noted above in the section labeled “Status of Claims.” This information is intended to assist in illuminating the teachings of the references while providing evidence that establishes further support for the rejections of the claims.

9. Given that the prior art of Pather and Seshadri have been disqualified and new art applied, Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant distinguishes Hanagan from the instant application by contrasting the purposes of these inventions. Applicant states “Hanagan describes a customer care and billing system that includes a variety of modular components. Hanagan at ¶ [0055]. The system also consolidates customer care and billing data to allow services to be provided and the data viewed via a single interface and through a consolidated database. Id. As such, Applicants respectfully submit that Hanagan fails to teach or suggest all the limitations of independent claim 1.” (Remarks, p. 14). Applicant goes on to note that the limitations of claim 1 states that “only a required set of eligible accounts are fetched for bulk processing based on [ ] criteria... Hanagan does not describe identifying accounts as eligible for bulk processing or fetching only a required set of eligible accounts...” (Remarks, p. 14). The teachings of Hanagan however derogate from these apparent distinctions. While it is true that Hanagan does not use the term “eligible” to flag those accounts that can be processed by the bulk component, Hanagan does refer to an equivalent concept. For example, Hanagan [0163] states “In many cases, service specific logic is required. The invention addresses this in one of two ways. If the processing is identical, but the values are different (e.g., rates for wireless service will vary from wireline), the rates are stored in user maintained tables. This preserves the common stream processing. If the processing is specific to a service type, (e.g., one type of service uses total off-hook time for duration, while another uses connect time), a common processing stream is created with alternative processing for specific event types. Even

when alternative processing is used, the event continues along the common path once the exception logic is completed. The key difference is that all usage follows a single path. There will be instances where a particular type of usage requires unique processing, but this processing is built into the common processing path." The substance of these claims therefore amounts to a simple mechanism for using processing systems efficiently, *i.e.,* bulk or batch processing for those accounts that are "eligible". Indeed, Hanagan [0082] addresses such issues:

> "The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. OP 22 actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time. OP 22 completely automates order scheduling and processing. This eliminates time-consuming errors due to missed steps and improper work implementations, freeing valuable resources to perform other value-added functions..."

11. Applicant argues that "Hanagan does not describe identifying accounts as eligible for bulk processing..." (Remarks, p. 14). Examiner respectfully disagrees. Hanagan [0355] describes "Batch Environments" wherein accounts can be handled and processed quickly and efficiently in such environments, but only under conditions where the data permit such processing to occur. Hanagan [0193] further describes the issues surrounding the maintenance of accounts. Hanagan [0359] elaborates on this: "As not all on-line workload is created equal, the invention also provides a framework for application servers, which are used for complex interactive processing. This minimizes the overhead required as objects are built only once on a server, rather than being built for every transaction."
12. Applicant highlights Examiner's citations of Hanagan [0411] regarding the notion of a "row is valid" and equating that with "eligible account". It should be noted however that the notion of what constitutes an eligible account is well-established in Hanagan as noted above. The logic that is effectuated and described above shows that certain accounts must, *ipso facto* have been identified, otherwise they would not have been processed. The mere use of the terms "eligible

accounts" is not the substantive issue, but what the processes do as not all accounts are amenable to 'bulk processing'. The use of labels such as 'eligible' is merely non-functional descriptive material that in any event is effected in Hanagan. In addition, reliance on Hanagan [0411] does not limit the application of the teachings of Hanagan. It should be noted that the Examiner is not required to map each limitation to a cited passage within the prior art of reference, as is suggested by the Applicant, nor is it the Examiner's responsibility to translate the technology, techniques, and/or methods of the prior art of record, since it is the assumption of the Examiner that the Applicant and the Applicant's representatives are those of at least ordinary skill in the art.

13. Ergo, the passages cited by the Examiner are a courtesy meant not only to lay a foundation of rejection of the claim limitations, but also to introduce the prior art of record as a benchmark of knowledge currently employed by artisans of the past and present, and also for establishing a pathway for continued prosecution. It is incumbent upon the Applicant and the Applicant's representative, then, to evaluate the prior art of record, point out misconceptions or other inaccuracies made by the Examiner, assert limitations that have not been properly addressed or that are novel, and, if deemed necessary, amend the claims to overcome the prior art of record, each and all in pursuit of an allowance.

14. Applicant further distinguishes the notion of 'task dependencies' as taught in Hanagan and the instant application noting that Hanagan refers to such dependencies in the context of workforce tasks as opposed to task dependencies associated with bulk processing tasks. (Remarks, p.15). Hanagan however, in at least [0387], teaches methods that discriminate between batch (bulk) processing and 'stream' or on-line processing. Indeed, Hanagan [0367] describes the operational features of online versus batch software processes where it is understood that processes inherently involve various conditions and task dependencies. Other passages in Hanagan further describes these features. For example, Hanagan [0416] states "Each batch process inherits from the HvfApplication infrastructure class, which provides a context for handling event-based processing." (emphasis added).

15. Applicant notes the amended claims recite more clearly the removal component and argues that Hanagan does not teach a removal component or process for removing an account that is made ineligible. The rejections below highlight such removal processes as in Hanagan [252]. Moreover, these particular elements are well-known in the art as not all components requiring processing are suitable for processing in a batch environment and removing certain accounts therefore is a basic mechanism for improving the efficiency of the system.
16. The particular passages relied on in Hanagan [0250] with respect to "a validator" (Remarks, p.16) are also addressed elsewhere in Hanagan. Similar arguments can me made to address Applicant's concerns with respect to the remaining claims.
17. In summary, the teachings of the prior art together teach every limitation of the rejected claims and/or demonstrate that the claimed invention is an obvious variation of what has been taught in the art.

Claim Objections

18. Claim 15 is objected to because of the following informalities: The claim recites "an error component that that processes..." wherein the word 'that' is repeated. Appropriate correction is required.

Claim Rejections - 35 USC § 112

19. The following is a quotation of the second paragraph of 35 U.S.C. §112:

    The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

20. Claims 15 – 21 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

    - Claim 15 recites "the processing of" after the limitation starting with "an error component...". This reference lacks sufficient antecedent basis in light of the later reference to "the resolved

errored account processing...". The manner in which this limitation is written is confusing and the lack of antecedent basis makes it more difficult to ascertain what is meant. For example, the merging step refers to processing of resolved errored accounts that are 'merged' with bulk processing of eligible accounts wherein the process of merging the processing seems unnecessarily confusing. It appears that the processing of resolved errored accounts are handled by adding those accounts to the bulk processing component and for purposes of examination, Examiner interprets this as meaning just that. Further clarification would be helpful here.

Claim Rejections - 35 USC § 101

21. 35 U.S.C. §101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

22. Claims 1 – 14, 22 – 30 and 34 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. While media are statutory categories the preamble of claim 1 referring to the "computer executable instructions embodied thereon" states "when executed provide...", yet there is no language asserting what component or device executes the aforementioned instructions. Language such as "a computer-executable program product (or computer readable media) comprising computer executable instructions tangibly embodied on a computer readable medium that when executed by said computer perform the method steps comprising…" is a suggestion for how to bring this claim into compliance with 35 U.S.C. §101 because "a computer-executable program tangibly embodied on a computer readable medium" is statutory subject matter. In addition, the specification states:

> "computer readable media can be any available media that can be accessed by the computer and includes both volatile and nonvolatile media,... By way of example, and not limitation, computer readable media can comprise computer storage media and communication media... Communication media typically embodies computer-readable

instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism, and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media. Combinations of the any of the above should also be included within the scope of computer-readable media." (emphasis added) (Specification, p. 16).

The following guidelines by the Office are therefore provided below as a courtesy to facilitate bringing the claims into statutory compliance.

23. The United States Patent and Trademark Office (USPTO) is obliged to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. See *In re Zletz*, 893 F.2d 319(Fed. Cir. 1989)(during patent examination the pending claims must be interpreted as broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals per se in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. See MPEP 2111.01. When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. §101 as covering non-statutory subject matter. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. §101, Aug. 24, 2009; p. 2.

24. The USPTO recognizes that applicants may have claims directed to computer readable media that cover signals *per se*, which the USPTO must reject under 35 U.S.C. §101 as covering both non-statutory subject matter and statutory subject matter. In an effort to assist the patent

community in overcoming a rejection or potential rejection under 35 U.S.C. §101 in this situation, the USPTO suggests the following approach. A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. §101 by adding the limitation **"non-transitory"** to the claim. *Cf: Animals -Patentability*, 1077 *Off. Gaz. Pat. Office* 24 (April 21, 1987) (suggesting that applicants add the limitation "non-human" to a claim covering a multi-cellular organism to avoid a rejection under 35 U.S.C. §101). Such an amendment would typically not raise the issue of new matter, even when the specification is silent because the broadest reasonable interpretation relies on the ordinary and customary meaning that includes signals per se. The limited situations in which such an amendment could raise issues of new matter occur, for example, when the specification does not support a non-transitory embodiment because a signal *per se* is the only viable embodiment such that the amended claim is impermissibly broadened beyond the supporting disclosure. See, *e.g., Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473 (Fed. Cir. 1998).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

26. Claims 1 – 5, 8, 9, 11 – 17, 19 and 21 – 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanagan, *et al.* (US PgPub 20040133487 A1) in view of von Kaenel, *et al.* (US 7107285 B2).

Claims 1, 15, 22, 28 and 31:

Hanagan describes and/or discloses *a system* (see title) and *method* (see *e.g.,* [0004] "billing", "aggregates", and in [0082] "determine the tasks…") and *computer-readable media* with *computer-executable instructions* (claim 3 and [0452] "server programs") *that facilitates task processing* ([0082]) and *periodic processing* ([0306] "on a periodic basis") *of subscription accounts* ([0102] "customer subscription information") in the following limitations, as shown:

- *a bulk component* ([0357] "batch environment") *that periodically, concurrently processes in a bulk mode,* ([0357] "automatically processed in parallel", hence *concurrently*) *a plurality of eligible accounts* ([0411] "row is valid" and in [0078] "providing advanced features to additionally support scripting and validations." (emphasis added)) *with a set of dependent tasks, wherein only a required set of eligible accounts are fetched for bulk processing based on one or more preset criteria for each of the tasks in the set of dependent tasks; and* (Hanagan [0329] "Task dependencies". Hanagan [0415] states "Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system." (emphasis added). Hanagan [0268] refers to use of parallel processing using a balanced workload. Hanagan [0355] *inter alia* also refers to scalability issues and batch environments and in Hanagan [0252] "user-defined criterion [*sic*] for selecting records based on characteristics of the record" corresponds to the *preset criteria* where only a subset of records requiring processing are processed.)*;*
- *a removal component* (Hanagan [abstract]: "The components are modular." and in [0252] "Filters can be set up to filter out records. […] Filters are defined using the ERP graphical user interface." (emphasis added) where 'filter out' corresponds to *removal* and 'ERP…' corresponds to *component*") *that removes an account from the eligible accounts and from bulk processing as an errored account if an error is associated therewith wherein the errored account is made ineligible for fetching for future bulk mode processing* ([0250] "Single erroneous UE records are errored out and written to an Invalid Event Records File. If some records are rejected due to invalid field

contents, the reason is written to an Error File." (emphasis added) where 'records' corresponds to *eligible accounts* and 'errored out' corresponds to an *errored account.*).

- *an error component* ([0149-56] "…in the case an error is detected." See also [0250] "The Validator") *that that processes the errored account* ([0250] "Single erroneous UE records are errored out and written to an Invalid Event Records File.") *to resolve the error associated therewith* (see [0250] and [0443] "Error Handling")*, and merges the processing of the resolved errored account with bulk processing* ([0250] "A GUI is also provided for error correction. […] The validated UE records are written to files (different files (same format) for assembly and non-assembly records)." (emphasis added) where 'validated' corresponds to *resolved errored account* and 'assembly' corresponds to *merges…* see also [0477] "The framework merges master and incremental update files…") *of the eligible accounts by the bulk component when the resolved errored account processing is temporally aligned with the bulk processing* ([0476] "Over time the master file will get out of synchronization with the database because of database inserts, updates or deletions that are applied to the database table. For large tables supporting time critical functionality, these additional changes are captured periodically and made available to running processes in an incremental update file." (emphasis added) where 'out of synchronization' in conjunction with 'changes…' and 'incremental update…' corresponds to *temporally aligned* and 'running processes' corresponds to *the bulk component* and *bulk processing*) *and identifies the errored account as eligible for fetching for future bulk processing* (Hanagan [0416] states "Work messages identify the location of the next 'unit of work' to be processed---usually a file of input records [...]")*; and*
- *[a catch-up component that] facilitates real-time processing of an account* ([0084] "The invention is a Customer Care and Billing (CCB) solution, providing convergent and modular functionality, real-time information, drastically shortened time to market, and a flexible architecture.").

Hanagan does not specifically use the terms *catch-up component, per se,* but these terms are non-functional descriptive material in that the limitation indicates that this 'component' merely 'facilitates' real-time processing. Thus, that which facilitates such processing reads on this limitation. Hanagan

[0416] as noted above provides this facilitation of real-time processing. Moreover, teaching for facilitating real-time processing of an account where accounts can get out of synchronization are old and well-known as typified by von Kaenel [0387] which teaches "The objects in the enterprise spatial system data store and the corresponding objects in the third party system data store may be correlated using an identifying key called Alternate Key ID (AKID). The use of AKID allows the related data in the two data stores to be synchronized. The use of AKID allows third party systems to maintain proprietary information that can interact with the spatial data stored at the enterprise spatial system and be provided to the user without submitting this information to the enterprise spatial system." (emphasis added) and in von Kaenel [1034] states "Subscription account periodic billing include, for example, using a batch process to generate account billing statements. The batch process may run daily at one or more specific run times that are adjustable through the Administration user interface. The Administration Services user interface shall also support suspension and resumption of the billing batch process, status review of past, current and daily pending accounts, and manual removal or addition of accounts for billing. In certain implementations, the batch process would be run at the least busy time of the day.", and thus provide examples of account management systems that maintain and/or facilitate synchronization.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the modular system models, components and methods of Hanagan that batch process subscription and billing accounts with the methods of von Kaenel that provide a mechanism for 'catching up' because account processing data handled in batches is highly scalable and thus merging corrected data, as by the *error component,* is important so that all accounts can be handled correctly. Thus, one of ordinary skill in the art would have recognized that applying the known technique of von Kaenel to Hanagan would have yielded predictable results and resulted in an improved system. It would have been recognized that applying the technique of synchronizing accounts in von Kaenel to the teaching of Hanagan would have yielded predictable results because the level of ordinary skill in the art demonstrated by the references applied shows the ability to incorporate such account synchronization techniques and would have been recognized by one of

ordinary skill in the art as resulting in an improved system that would allow more efficient real-time processing of account subscriptions.

Claims 2 and 16:

Hanagan teaches the following limitation:

- *the tasks are processed sequentially* (see [0157] and [0259] "The sequence of calculations…") *against the plurality of eligible accounts* ([0180] "Maintain Customer Accounts") *according to task dependencies* ([0329]).

Claims 3 and 17:

Hanagan teaches the following limitation:

- *the bulk component repeatedly processes the errored account up to a predetermined number of attempts before the errored account is removed by the removal component for error processing* ([0247] "A raw event record file is rejected if it contains too many erroneous records (where "too many" is specified in a user-defined parameter)…" and in [0283] "the cycle can be approved for distribution or rejected to be reprocessed." (emphasis added) and finally, in [0250] see "error correction" and [0476] for "deletions" and *removal component*)).

Claims 4 and 23:

Hanagan teaches the following limitation:

- (claim 4) *wherein the errored account is merged back into bulk mode processing by the bulk component when the error associated therewith has been resolved.*
- (claim 23) *merging the errored account* ([0250] "Single erroneous UE records are errored out and written to an Invalid Event Records File.") *that has been resolved with the one or more eligible accounts for further processing in bulk* ([0250] "A GUI is also provided for error correction. […] The validated UE records are written to files (different files (same format) for assembly and non-assembly records)." (emphasis added) where 'validated' corresponds to *errored account that has been resolved* and 'assembly' corresponds to *merging…* see also [0477] "The framework merges master and incremental update files…").

Claim 5:

Hanagan teaches the following limitation:

- *the errored account is merged back into bulk mode processing only when the errored account has been resolved* (see the rejections of claims 4 and 23 above. Note the phrase therein *that has been resolved…* is logically equivalent to the condition/limitation *only when the…*) *temporally with bulk mode processing of the bulk component* ([0476] "Over time the master file will get out of synchronization with the database because of database inserts, updates or deletions that are applied to the database table. For large tables supporting time critical functionality, these additional changes are captured periodically and made available to running processes in an incremental update file." (emphasis added) where 'out of synchronization' in conjunction with 'changes…' and 'incremental update…' corresponds to *resolved temporally* and 'running processes' corresponds to *the bulk component*).

Claim 8:

Hanagan teaches the following limitation:

- *the dependent tasks processed on a first day must be processed error-free before the same tasks can be processed on a succeeding day* ([0082]: "The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. OP 22 actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time. OP 22 completely automates order scheduling and processing. This eliminates time-consuming errors due to missed steps and improper work implementations, freeing valuable resources to perform other value." (emphasis added)).

Claim 9:

Hanagan does not specifically teach the following limitation, but von Kaenel, in an analogous art, does as shown.

- *comprising a catch-up component for real-time processing of an account* (von Kaenel [0387] states "The objects in the enterprise spatial system data store and the corresponding objects in

the third party system data store may be correlated using an identifying key called Alternate Key ID (AKID). The use of AKID allows the related data in the two data stores to be synchronized. The use of AKID allows third party systems to maintain proprietary information that can interact with the spatial data stored at the enterprise spatial system and be provided to the user without submitting this information to the enterprise spatial system." (emphasis added) and in von Kaenel [1034] states "Subscription account periodic billing include, for example, using a batch process to generate account billing statements. The batch process may run daily at one or more specific run times that are adjustable through the Administration user interface. The Administration Services user interface shall also support suspension and resumption of the billing batch process, status review of past, current and daily pending accounts, and manual removal or addition of accounts for billing. In certain implementations, the batch process would be run at the least busy time of the day.", and thus provide examples of account management systems that maintain and/or facilitate synchronization, hence provide mechanism for processing elements to 'catch up' to the processing points of other elements as this is what the term 'synchronization' indicates.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the modular system models, components and methods of Hanagan that batch process subscription and billing accounts with the methods of von Kaenel that provide a mechanism for 'catching up' because account processing data handled in batches is highly scalable and thus merging corrected data, as by the *error component,* is important so that all accounts can be handled correctly. Thus, one of ordinary skill in the art would have recognized that applying the known technique of von Kaenel to Hanagan would have yielded predictable results and resulted in an improved system. It would have been recognized that applying the technique of synchronizing accounts in von Kaenel to the teaching of Hanagan would have yielded predictable results because the level of ordinary skill in the art demonstrated by the references applied shows the ability to incorporate such account synchronization techniques and would have been recognized by one of ordinary skill in the art as resulting in an improved system that would allow more efficient real-time processing of account subscriptions.

Claim 19:

Hanagan teaches the following limitation:

- *the bulk component* ([0357] "batch environment") *the system performs periodic processing* ([0306] "on a periodic basis" and in [0411] "row is valid" and in [0078] "providing advanced features to additionally support scripting and validations." (emphasis added)) *of subscriber accounts* ([0102] "customer subscription information").

Claim 11:

Hanagan teaches the following limitation:

- *the plurality of eligible accounts are processed in parallel by one or more computing devices* ([0268] "ERP [ ] is designed for parallel processing and the workload is balanced between the different processes by workload servers.").

Claim 12:

Hanagan teaches the following limitation:

- *the plurality of eligible accounts are processed in parallel by different threads of execution on a single computing device* ([0396] "On-line application servers are multi-threaded.").

Claim 13:

Hanagan teaches the following limitation:

- *the plurality of eligible accounts are processed in accordance with an access control list* ([0456] regarding data security and "login screens". Also, in [0432] "restrict unauthorized access". Hanagan [0482] also describes control mechanisms for data access which are obvious variations of permitting processing in accordance with an access control list.).

Hanagan does not specifically refer to an *access control list per se,* but von Kaenel does. von Kaenel [0319] states "Implementations of the invention also maintain access control lists (commonly referred to as ACLs) for each of the resources represented in the metadata tables. The access control list for a given resource is a list of users who can access the resource." (emphasis added). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an access control list as taught by von Kaenel in the system of Hanagan and process

accounts *in accordance* therewith because preserving data security and integrity is a necessary condition for ensuring the utility and the functionality of any large-scale information processing system and the utility of such restrictions were predictable at the time of the invention and since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 14:

Hanagan teaches *if a number of dependencies associated with an account are below a second threshold, the predetermined threshold defining a limit on the use of system resources* (Hanagan [0329] states "Advanced Scheduling Algorithms--OP 22 supports all types of standard scheduling algorithms. Task dependencies, service request dependencies, and resource availability are all taken into account during the scheduling process." (emphasis added) and Hanagan [0253] states "A warning is issued when configurable specified thresholds are passed." Hanagan [0082]: "The work request is analyzed to determine the tasks required to complete the request, as well as all scheduling dependencies that are required. The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. [...] actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time. [...] completely automates order scheduling and processing. This eliminates time-consuming errors due to missed steps and improper work implementations, freeing valuable resources to perform other value added functions." (emphasis added)). Hanagan does not specifically teach the following limitations, but von Kaenel, as shown, does.

- *wherein the system is restrained to keep utilization of system resources* (von Kaenel [1005] states "An additional function of the Admin Tool is to monitor and control the various processes, services and systems operating in the Web Center. This user interface is a centralized status and control monitoring console that collects data and feeds-back commands to control various system components.") *under a predetermined threshold* (von Kaenel [1092] states "Active monitoring of

available data is accomplished through review of raw logs, exception events, and programmed statistical limit controls." (emphasis added) where 'limit controls' corresponds to 'threshold') *if a number of dependencies associated with an account are below a second threshold, the predetermined threshold defining a limit on the use of system resources.*

Thus, one of ordinary skill in the art would have recognized that applying the known technique of von Kaenel to Hanagan would have yielded predictable results and resulted in an improved system. It would have been recognized that applying the technique of synchronizing accounts in von Kaenel to the teaching of Hanagan would have yielded predictable results because the level of ordinary skill in the art demonstrated by the references applied shows the ability to incorporate such account synchronization techniques and would have been recognized by one of ordinary skill in the art as resulting in an improved system that would allow more efficient real-time processing of account subscriptions.

Claim 21:

Hanagan teaches the following limitation:

- *the bulk component and the error component process accounts concurrently* ([0443]: "Error Handling: Error handling allows applications to deal consistently with error or fault situations. Error handling for batch applications is different in some respects than for on-line applications since high-volume errors must not stop processing as long as work can continue. On-line errors generally must be dealt with immediately." (emphasis added)).

Claim 24:

Hanagan teaches the following limitation:

- *the processing in bulk further comprises,*
  - *processing task dependency data related to the set of tasks* ([0329]: "Task dependencies, service request dependencies, and resource availability are all taken into account during the scheduling process.");
  - *maintaining system state data of the system* (see [0316] regarding "State Transition Knowledge Base");

- *generating an account level exception list of exceptions generated during the processing in bulk* (In at least [0162] reference is made to "processing" and "exception logic". Further, in [0247] "…the Error Report File…" which is equivalent to *an account level exception list.* Also, in [0443] "Error handling for batch applications…" where this also pertains to *account[s]* as shown in [0081] "The Customer Bill Manager…the mass batch of documents.")*;*
- *monitoring and reporting system processes related to at least bulk processing* ([0330]: "The invention monitors tasks for these conditions and creates alarms that are directed to workers to inform them of the problems." (emphasis added))*,*
- *removing an errored account* ([0252] "Filters can be set up to filter out records. […]" and in [0250] "Single erroneous UE records are errored out […]")*; and*
- *providing error handling related to an error generated by the errored account* ([0443]).

Claim 25:

Hanagan teaches the following limitation:

- *reprocessing the errored account in bulk before removing the account for error processing* (see the rejections of claims 3 and 17).

Claim 26:

Hanagan [0078] teaches the limitation *reprocessing the errored account before requiring manual intervention to initiate further reprocessing,* "customer service representatives [to] spend more time focusing on the customer and less time on manual and redundant tasks." because this can tend to increase system productivity (see *e.g.,* [0328]).

Claim 27:

Hanagan teaches the following limitation:

- *predicting when subscription cycle end processing needs to be performed next* (See the rejection of claim 18 above and [0307]. Also, in [0082]: "OP 22 completely automates order scheduling and processing." and in [0415]: "Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional

event or file of events from an external system." (emphasis added) where 'workload…' corresponds to *subscription cycle end process* as in the rejection of claim 18, 'pre-defined…' and 'predictable…' and '…event' corresponds to the limitation since scheduling an event or task is equivalent to *predicting when*...).

Claim 29:

Hanagan teaches the following limitation:

- *determining according to a predetermined threshold level when a second account that is dependent on a first account is considered inconsistent* (Regarding the first and second account (*dependent on…*) in in [0133] "These types of customers are generally large with multiple invoices, accounts, and locations." (emphasis added) hence related or dependent accounts. In [0250-3]: "The Validator [ ] validates the [ ] records for correctness and […] performs different types of edits on the fields of the internal record format (for example, numeric checks, date validations, and value checks). Moreover, the Validator determines which records need to be assembled for long duration. An event record file is rejected if it contains too many erroneous records (as specified in a parameter). […] Several error groups can be defined. […] The importance of the error group determines how to handle the record (for example, ignore the incorrectness, recycle the record, or write it to the Invalid Event Records File). The error severity can be configured. […] Corrections can be applied either to individual records, or to multiple records grouped by error codes and error groups. […] A warning is issued when configurable specified thresholds are passed.")

Claim 32:

Hanagan teaches the following limitation:

- *a first system that processes a set of tasks against a plurality of accounts;*
- *a second system that processes the same set of tasks against the plurality of accounts periodically* (Hanagan [0415] states "Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system." (emphasis added).) *wherein the first system signals*

the second system to bypass processing of one of the plurality of accounts if the first system determines an error in the one account ([0163]: "Even when alternative processing is used, the event continues along the common path once the exception logic is completed." In [0444]: "This service allows processes to be controlled by a central control and management process (C&M). In this case, C&M can start, stop (gracefully or immediately) and monitor processes to verify their current state (running or in error)." (emphasis added) where 'processes' refers to at least two system elements or systems. In [0250]: "The Validator 176 validates the UE (Unrated Event) records for correctness and sends the UE records to the Duplicate Event Check process. […] An event record file is rejected if it contains too many erroneous records (as specified in a parameter). Single erroneous UE records are errored out and written to an Invalid Event Records File. […] The importance of the error group determines how to handle the record (for example, ignore the incorrectness, recycle the record, or write it to the Invalid Event Records File)" (emphasis added) where 'write it to the…' corresponds to *bypass processing*. Also, in [0475]: "Multiple processes can share memory-mapped files. If two processes on the same machine map to the same file, the file will be loaded into memory only once." (emphasis added) where 'file' corresponds to *accounts* and 'multiple processes' corresponds to *processes a set of tasks…*).

Claim 33:

Hanagan teaches the following limitation:

- *the second system signals the first system to bypass processing of a second account of the plurality of accounts if the second system determines an error in the second account* (Hanagan [0445] states: "Using special workload balancing processes, message queuing provides a straightforward mechanism for load balancing across multiple batch application processes serving the same function." (emphasis added) and see the rejection of claim 32 above. Also, Hanagan [0196] distinguishes between account sets and types and specifically refers to "a second account").

Claim 34:

Hanagan teaches the following limitation:

- *a bulk component* ([0357] "batch environment") *that periodically, concurrently bulk processes* ([0357] "automatically processed in parallel") *a plurality of eligible accounts* ([0411] "row is valid" and in [0078] "providing advanced features to additionally support scripting and validations." (emphasis added)) *with a set of dependent tasks* ([0329] "Task dependencies". Hanagan [0415] states "Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system." (emphasis added).)*;*
- *a removal component* (Abstract: "The components are modular." and in [0252] "Filters can be set up to filter out records. […] Filters are defined using the ERP graphical user interface." (emphasis added) where 'filter out' corresponds to *removal* and 'ERP…' corresponds to *component*") *that removes an account from the eligible accounts as an errored account if an error is associated therewith and identifies the errored account as ineligible for fetching for future bulk processing* (Hanagan [0250] "Single erroneous UE records are errored out and written to an Invalid Event Records File. If some records are rejected due to invalid field contents, the reason is written to an Error File." (emphasis added) where 'records' corresponds to *eligible accounts* and 'errored out' corresponds to an *errored account*. Hanagan [0416] states "Work messages identify the location of the next 'unit of work' to be processed---usually a file of input records [...]")*;*
- *an error component* (Hanagan [0149-56] "…in the case an error is detected." See also [0250] "The Validator") *that processes the errored account* (Hanagan [0250] "Single erroneous UE records are errored out and written to an Invalid Event Records File.") *to resolve the error associated therewith producing a resolved errored account, identifies the resolved errored account as eligible for fetching for future bulk processing,* (Hanagan [0416] states "Work messages identify the location of the next 'unit of work' to be processed---usually a file of input records [...]"; see also Hanagan [0250] and [0443] "Error Handling")*, and merges the*

processing of the resolved errored account with bulk processing ([0250] "A GUI is also provided for error correction. [...] The validated UE records are written to files (different files (same format) for assembly and non-assembly records)." (emphasis added) where 'validated' corresponds to *resolved errored account* and 'assembly' corresponds to *merges...* see also [0477] "The framework merges master and incremental update files...") *of the eligible accounts by the bulk component when the processing of the resolved errored account is temporally aligned with the bulk processing* ([0476] "Over time the master file will get out of synchronization with the database because of database inserts, updates or deletions that are applied to the database table. For large tables supporting time critical functionality, these additional changes are captured periodically and made available to running processes in an incremental update file." (emphasis added) where 'out of synchronization' in conjunction with 'changes...' and 'incremental update...' corresponds to *temporally aligned* and 'running processes' corresponds to *the bulk component* and *bulk processing*); *and*

Hanagan does not specifically use the terms *catch-up component, per se,* but these terms are non-functional descriptive material in that the limitation indicates that this 'component' merely 'facilitates' real-time processing. Thus, that which facilitates such processing reads on this limitation. Hanagan [0416] as noted above provides this facilitation of real-time processing. Moreover, teaching for facilitating real-time processing of an account where accounts can get out of synchronization are old and well-known as typified by von Kaenel [0387] which teaches "The objects in the enterprise spatial system data store and the corresponding objects in the third party system data store may be correlated using an identifying key called Alternate Key ID (AKID). The use of AKID allows the related data in the two data stores to be synchronized. The use of AKID allows third party systems to maintain proprietary information that can interact with the spatial data stored at the enterprise spatial system and be provided to the user without submitting this information to the enterprise spatial system." (emphasis added) and in von Kaenel [1034] states "Subscription account periodic billing include, for example, using a batch process to generate account billing statements. The batch process may run daily at one or more specific run times that are adjustable through the Administration

user interface. The Administration Services user interface shall also support suspension and resumption of the billing batch process, status review of past, current and daily pending accounts, and manual removal or addition of accounts for billing. In certain implementations, the batch process would be run at the least busy time of the day.", and thus provide examples of account management systems that maintain and/or facilitate synchronization.).

Conclusion

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon that is considered pertinent to applicant's disclosure are:

• Savage, et al. (US 7236950 B2) and pertain to account processing.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Mark A. Fleischer** whose telephone number is **571.270.3925.** The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **Lynda Jasmin** whose telephone number is **571.272.6782** may be contacted.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal/pair <http://pair-direct.uspto.gov >. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

Any response to this action should be mailed to:

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or faxed to **571-273-8300**.

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Mark A. Fleischer
/Mark A Fleischer/
Examiner, Art Unit 3624 27 August 2010

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Supervisory Patent Examiner, Art Unit 3623